

## **ABSTRACT**

A process is described for manufacturing a solid oxide fuel cell (SOFC) (400) having a cathode (408), anode (404), and an electrolyte (406) via a one-step powder consolidation process using hot or hot iso-static pressing. The one-step process provides for a means for low-cost, high-volume, high-efficiency manufacturing of planar SOFC-dense electrolyte structures that is sandwiched between a porous anode and cathode electrodes. In addition, multiple cells can be simultaneously pressed using a stacked configuration.